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JUN 8 - 1961

RESEARCH IN THE NEWS... 1959

Scientists of the U.S. Department of Agriculture forged ahead in all fields of agricultural research during 1959. The Department's Agricultural Research Service put increasing emphasis on utilization research aimed at providing industrial markets for agricultural commodities and the effort bore fruit. Accomplishments in finding new industrial uses for farm products, especially those in regular or seasonal surplus, were featured in a spring exhibit which attracted nationwide attention. A breakthrough in plant physiology established a photo-reversible pigment as a key to plant growth. Progress was reported in farm research, in home economics research, and in the work of the ARS regulatory divisions. The following photographs illustrate some of the year's activities. For additional details see the year-end reviews of Agricultural Research Service reported in USDA press releases . . . Nos. USDA-3495-59, USDA 3496-59, USDA 3497-59.



N-32147.--Utilization research to broaden industrial markets for farm products was featured in a USDA exhibit which opened in Washington in June 1959.

N-34247.--Discovery by a USDA team of scientists of a light-sensitive pigment that acts as the triggering mechanism for plant development promises to give man control of all stages of plant growth. Here Dr. H. A. Borthwick, one of the discoverers, explains the pigment's action.



U. S. DEPARTMENT OF AGRICULTURE
Office of Information

Picture Story No. 121
January 1960

Magazines and newspapers may obtain glossy prints of any of these photographs from the Photography Division, Office of Information, U. S. Department of Agriculture, Washington 25, D. C. Others may purchase prints (8 x 10) at \$1.00 each from the same address.



Bn-7665-X.--For her contribution and leadership in furthering the science of human nutrition, Hazel K. Stiebeling, director of the ARS Institute of Home Economics, received the Award for Distinguished Civilian Service from President Eisenhower (January 20, 1959).



N-31742.--An automatic pilot for use with hydraulic power steering on farm tractors is demonstrated here by ARS engineer Louis A. Liljedahl, who designed it. The new device makes possible precision cultivation of row crops with better control of weeds and less injury to the crop.



N-34251.--During his visit to the Agricultural Research Center, Beltsville, Md., in September, Russian Premier Khrushchev learned how dairy breeding experiment increased annual production of milk by 15 percent and butterfat by 34 percent in 8 generations.



N-31863.--Atomic radiation treatments of seed by ARS plant breeders resulted in a new stem rust-resistant bluegrass (foreground). Its good growth is compared here with susceptible variety nearest to the scientist.



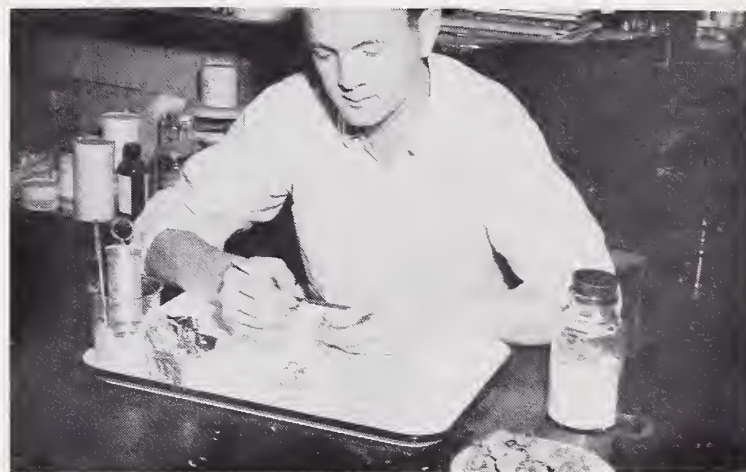
N-28644.--Research on effect of light intensity on yield of forage showed that shade increases moisture content and content of woody plant material--lignin--while decreasing available carbohydrates in forage. The cooperative ARS-Georgia study helps explain why cattle make poorer gains during rainy, cloudy weather.



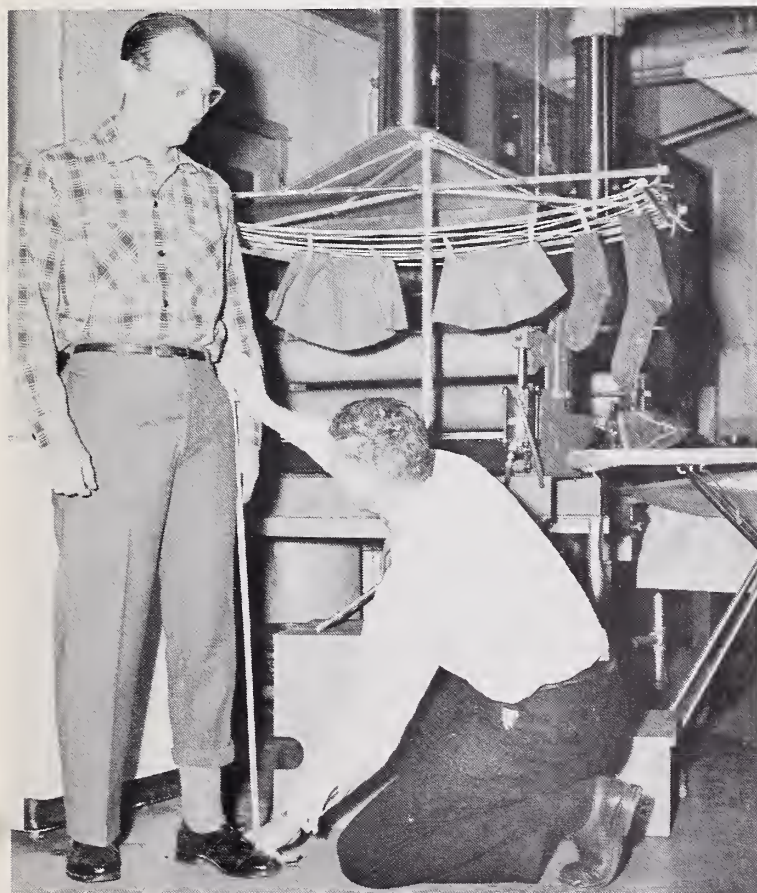
N-33145.--Year-old samples of wheat demonstrate effectiveness of ethylene oxide in protecting stored grain against destructive organisms. Treated sample (left), untreated (right). ARS scientists made this and many other potential uses for the sterilant possible by developing a safe way to use it as an aerosol-dispensed product.



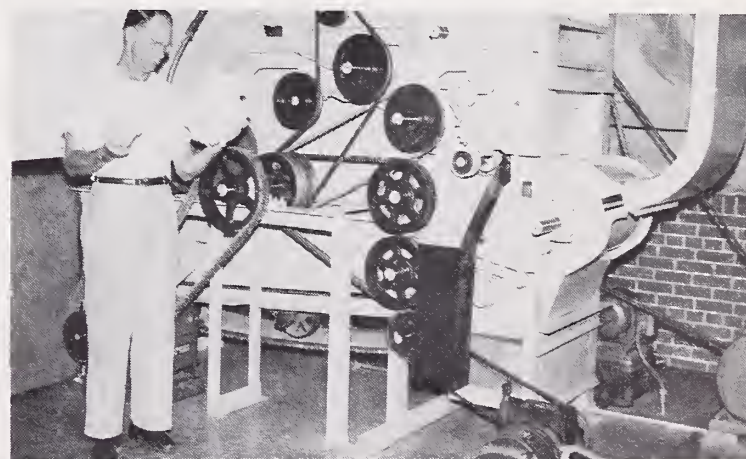
N-9742-D.--Basic nutrition studies with laboratory animals provide leads on how the body uses fat. Preliminary research results indicate that the kind of carbohydrate in the diet may have an important effect on the production of fatty livers, damaged kidneys, and on cholesterol levels in the blood.



N-31476.--Research to control the cotton boll-weevil was helped by development of a synthetic weevil diet, making possible year-round laboratory study of this pest. Here entomologist, Dr. Norman Earle, one of the developers of the diet, prepares eggs of the insect for laboratory-rearing.



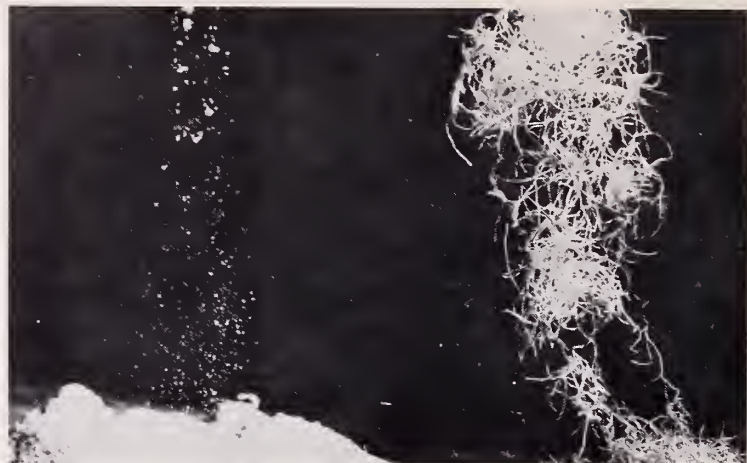
N-30684.--Minimum-care woolens are in prospect as a result of chemical treatment developed experimentally by ARS wool research scientists. Treated half of trousers is compared with untreated half after repeated washings. The treated half shows little shrinkage and retains its shape and other normal good qualities of wool.



Bn-7538X.--A saving to cotton textile mills of as much as \$100 a day is possible by this new opener-cleaner developed by ARS cotton research scientists and engineers. Eighteen of the units are already in use in cotton mills; many others are on order.



Bn-7201X.--This row crop sprayer-duster, designed through cooperative ARS, State, and industry research, effectively controls green peach aphids that attack the underside of leaves of potato plants. The equipment can be adapted for spraying or dusting other insects on low-growing crops.



Bn-7949.--An industrial future is assured for amylose starch from a new kind of corn. When treated chemically amylose forms a fibrous material (right) that can be made into tough durable films. Given the same treatment amylopectin forms a powdery substance (left).



N-32200.--Study of sedimentation samples collected here is part of basic research begun at the new USDA Sedimentation Laboratory at Oxford, Miss. Knowledge gained about sediment movement in streams may lead to solution of national sedimentation problems in the Southeast.



19532B.--Young pigs like these now stand a better chance of living and getting to market as a result of the successful eradication of vesicular exanthema, a serious disease of swine. Getting rid of VE after seven years of cooperative State-Federal effort, also means millions of dollars saved to the livestock and meat industries.

Bn-5343.--Tents like this erected over Hall scale-infested stone-fruit and nut trees for fumigation with hydrocyanic acid are no longer needed in California. Joint efforts of USDA and California plant pest control specialists neared a conclusion with a cautious 1959 announcement that this destructive pest had been eradicated from the U.S.

